



Santa Clara Fire Department

Tents, Canopies and Temporary Membrane Structures



PURPOSE

This guide is intended to provide safety standards and regulations for the installation of temporary tents, canopies, air-supported, air-inflated or tensioned membrane structures.

SCOPE

Guideline for tents, canopies, and temporary membrane structures are established in order to ensure compliance with applicable codes and regulations. The Santa Clara Fire Department (SCFD) is responsible for enforcing these requirements, which are contained in the 2007 California Fire Code Chapter 24, and Title 19 of the California Code of Regulations (CCR). Where specific language is enforced, the applicable code is cited for reference.

Temporary tents, air-supported, air-inflated, or tensioned membrane structures and canopies shall not be erected for a period of more than 180 days within a 12 month period on a single premise.

DEFINITIONS

A permit is required for the following:

Tent - Any structure, enclosure or shelter constructed of fabric or pliable material supported by any manner except by air or contents that it protects greater than 200 square feet with more than 25 percent of the perimeter enclosed.

Canopies - Any structure, enclosure or shelter constructed of fabric or pliable material supported by any manner, except by air or contents it protects greater than 400 square feet with 75 percent or less of the perimeter enclosed.

Air-supported - A structure wherein the shape of the structure is attained by air pressure and occupants of the structure are within the elevated pressure area.

SUBMITTAL REQUIREMENTS

In order to ensure adequate time to process plans and issue permits, **the following must be provided to the Santa Clara Fire Department Fire Marshal's Office a minimum of 2 weeks prior to the date of event.**

1. GENERAL:

- A. A Fire permit is required for all tents exceeding 200 square feet and canopies exceeding 400 square feet shall be submitted to SCFD for review.
- B. Provide one site diagram.
- C. Submit a completed SCFD Permit Application, which can be obtained at the Fire Marshal's Office, 1675 Lincoln Street, Santa Clara or on the City of Santa Clara website at www.santaclaraca.gov.
- D. Submit appropriate fees: \$245 each structure.

- E. Submittals may be mailed or hand delivered to Santa Clara Fire Department, Division of Fire Prevention, 1675 Lincoln Street, Santa Clara, CA 95050. All fees must be paid at the time of plan submittal.
 - F. Plans not conforming to these minimum requirements will be returned as incomplete.
2. **Site Diagram** - An accurate scale or dimensioned site diagram indicating:
- A. Specific areas for parking of vehicles shall be detailed on the site plan.
 - B. Dimensions for all tents, canopies, and membrane structures.
 - C. A statement which identifies the intended use of all structures and the dates for which the permit is required.
 - D. The sidewalls, drops, top, floor coverings, and decorative materials shall be composed of flame resistant material or treated with a flame retardant material in an approved manner. All materials used within the structure shall comply with the flame propagation performance criteria of NFPA 701. (CFC 2007 Chapter 24 Sec 2404.2)
 - E. A statement which indicates the proposed use of any heating and/or cooking equipment or open flame devices in conjunction with the event. **(Additional conditions and permit will be required)**
 - F. Locations of any additional emergency equipment such as hose lines or emergency power supplies if required.
3. **Floor Plan** – A floor plan shall be submitted and the following shall be shown: (CFC 2007 Chapter 24 sec 2403.6)
- A. Proposed seating arrangements,
 - B. Locations and dimensions of tables,
 - C. Locations and type of all other interior obstacles,
 - D. Exit locations; dimensions required,
 - E. Locations of all emergency exit pathways shall be maintained at all times,
 - F. Locations of NO SMOKING signs,
 - G. Locations and type of emergency lighting, including proposed power source(s),
 - H. Locations and type of exit signs,
 - I. Locations of portable fire extinguishers,
 - J. Type of floor surface proposed inside tent or canopy,
 - K. Location and width of all-weather fire access roadways.
4. **Inspection Requirements** - A site inspection is required after the structure has been erected (prior to the event). The inspector shall verify compliance with these guidelines. All inspections shall be scheduled a minimum of 2 days prior to the date of the event. All required Building and Planning Department approvals must be obtained prior to the date of the event. **All permits shall be posted at the site or kept in an approved location on the premises.**
5. **Location** - Tents, canopies, or membrane structures shall not be located within 20 feet of lot lines, buildings, other tents, canopies, or membrane structures, parked vehicles or internal combustion engines. For the purpose of determining required distances, support ropes and guy wires shall be considered as part of the temporary membrane structure, tent, or canopy. (CFC 2007 Chapter 24 sec 2403.8.2)

Exceptions:

- A. Separation distance between membrane structures, tents, and canopies not used for cooking is not required when the aggregate floor area does not exceed 15,000 square feet.
 - B. Membrane structures, tents, or canopies need not be separated from buildings when all the following conditions are met:
 - (i) The aggregate floor area of the membrane structure, tent, or canopy shall not exceed 10,000 square feet,
 - (ii) The aggregate floor area of the building and membrane structure, tent or canopy shall not exceed the allowable floor area, including increases, as indicated in the *California Building Code*,
 - (iii) Required means of egress provisions are provided for the building and the membrane structure, tent or canopy, including travel distances,
 - (iv) Fire apparatus access roads are provided in accordance with Section 503 related to building and temporary structures.
6. **Structures in excess of 15,000 square feet** - Membrane structures having an area of 15,000 square feet or more shall be located not less than 50 feet from any other tent or structure as measured from the sidewall of the tent or membrane structure, unless joined together by a corridor. (2007 CFC Chapter 24 Section 2403.8.3)
7. **Fire Break** - An unobstructed fire break passageway or fire road not less than 12 feet wide, and free from guy ropes or other obstructions, shall be maintained on all sides of all tents, canopies and membrane structures unless otherwise approved by the fire code official. (2007 CFC Chapter 24 Section 2403.8.5)
8. **Means of Egress** - Means of egress from temporary tents, canopies, and membrane structures shall be in accordance with 2403.12.1 through 2403.12.8. (2007 CFC Chapter 24 Section 2403.12)
- A. Distribution - Exits shall be spaced at approximately equal intervals around the perimeter of the tent, canopy, or membrane structure, and shall be located such that all points are 100 feet or less from an exit. (2007 CFC Chapter 24 Section 2403.12.1)
 - B. Exit openings from tents - Exit openings from tents shall remain open unless covered by a flame resistant curtain. The curtain shall comply with the following:
 - (i) Curtains shall be free sliding on a metal support. The support shall be a minimum of 80 inches above the floor level at the exit.
 - (ii) The curtains shall be so arranged that, when open, no part of the curtain obstructs the exit. Curtains shall be of a color, or colors, that contrast with the color of the tent. (2007 CFC Chapter 24 Section 2403.12.3)
 - C. Number - Tents, canopies or membrane structures, or a useable portion thereof, shall have at least one exit and not less than the number of exits required by Table 2403.12.2. The total width of means of egress in inches shall not be less than the total occupant load served by a means of egress multiplied by 0.2 inches per person. (2007 CFC Chapter 24 Section 2403.12.2)

TABLE 2403.12.2
MINIMUM NUMBER OF MEANS OF EGRESS AND
MEANS OF EGRESS WIDTHS FROM TEMPORARY
MEMBRANE STRUCTURES, TENTS AND CANOPIES

OCCUPANT LOAD	MINIMUM NUMBER OF MEANS OF EGRESS	MINIMUM WIDTH OF EACH MEANS OF EGRESS (inches)	MINIMUM WIDTH OF EACH MEANS OF EGRESS (inches)
		Tent or Canopy	Membrane Structures
10 to 199	2	72	36
200 to 499	3	72	72
500 to 999	4	96	72
1,000 to 1,999	5	120	96
2,000 to 2,999	6	120	96
Over 3,000 ^a	7	120	96

a. When the occupant load exceeds 3,000, the total width of the means of egress (inches) shall not be less than the total occupant load multiplied by 0.2 inches per person.

9. **Seating Arrangements** - Seating in tents, canopies, or membrane structures shall be in accordance with Chapter 10. (2007 CFC Chapter 24 Section 2403.11)
 - A. Clear width of aisle access ways serving seating - Where seating rows have 14 or fewer seats, the minimum clear aisle access ways width shall not be less than 12 inches measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. Where any chair in the row does not have an automatic or self-rising seat, the measurements shall be made with the seat in the down position. (2007 CFC Chapter 10 Section 1025.10)
 - B. Dual access - For rows of seating served by aisles or doorways at both ends, there shall not be more than 100 seats per row. The minimum clear width of 12 inches between rows shall be increased by 0.3 inch for every additional seat beyond 14 seats, but the minimum clear width is not required to exceed 22 inches. (2007 CFC Chapter 10, Section 1025.10.10)
 - C. Single access - For rows of seating served by an aisle or doorway at only one end of the row, the minimum clear width of 12 inches between rows shall be increased by 0.6 inch for every additional seat beyond seven seats, but the minimum clear width is not required to exceed 22 inches. Distance measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. (2007 CFC Chapter 10 Section 1025.10.6)
10. **Doors** - Exit doors shall swing in the direction of exit travel. To avoid hazardous air and pressure loss in air supported membrane structures, such doors shall be automatic closing against operating pressures. Opening force at the door edge shall not exceed 15 pounds. (2007 CFC Chapter 24 Section 2403.12.4)
11. **Aisles** - The width of aisles without fixed seating shall be in accordance with the following: (2007 CFC Chapter 24 Section 2403.12.5)
 - A. Areas serving employees only - The minimum aisle width shall be 24 inches but not less than the width required by the number of employees served.
 - B. Public areas - Smooth surfaced, unobstructed aisles having a minimum width of not less than 44 inches shall be provided from seating areas, and aisles shall be progressively increased in width to provide, at the points, not less than 1 foot of aisle width for each 50 persons served by such aisle at the point.

C. Arrangement and maintenance - The arrangement of aisles shall be subject to approval by the fire code official and shall be maintained clear at all times during occupancy. (2007 CFC Chapter 24 Section 2403.12.5.1)

12. **Exit signs** - Exit signs shall be installed when occupant load is in excess of 50 people. (2007 CFC Chapter 24, Section 2403.12.6)
13. **Exit sign illumination** - Exit signs shall be of an approved self-luminous type or shall be internally or externally illuminated by luminaries supplied in the following manner: (2007 CFC Chapter 24 Section 2403.12.6.1)
- A. Two separate circuits, one of which shall be separated from all other circuits, for occupant loads of 300 or less; or
 - B. Two separate sources or power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds 300. Emergency systems shall be supplied from storage batteries or from the onsite generator set, and system shall be installed in accordance with the California Electrical Code. **A city Building Department electrical permit may be required. Check with local Building Department prior to Fire Authority inspection.**
14. **Means of egress illumination** - Means of egress shall be illuminated with light having an intensity of not less than 1 foot candle at floor level while the structure is occupied. Fixtures required for means of egress illumination shall be supplied from a separate circuit or source of power. **Means of egress illumination shall be provided for 50 or more persons.** (2007 CFC Chapter 24 Section 2403.12.7)
15. **Maintenance of means of egress** - The required width of exits, aisles, and passageways shall be maintained at all times to a public way. Guy wires, guy ropes, and other support members shall not cross a means of egress at a height of less than 8 feet. The surface of means of egress shall be maintained in an approved manner. (2007 CFC Chapter 24 Section 2403.12.8)
16. **Posting of occupant load** - Every room or space that is assembly occupancy shall have that occupant load of the room posted in a conspicuous place. (2007 CFC Chapter 10 Section 1004.3)
17. **Areas without fixed seating** - The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.1. For areas without fixed seating, the occupant load shall not be less than the number determined by dividing the floor area under consideration by the occupancy as set in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the Fire Code Official shall determine the square footage factor to be used to calculate the occupant load. (2007 CFC Chapter 10, Section 1004.1.1)

TABLE 1004.1.1 ASSEMBLY AREAS WITHOUT FIXED SEATING:

ASSEMBLY AREAS WITHOUT FIXED SEATING	
Concentrated (chairs only)	7 net
Standing Space	5 net
Un-concentrated (tables and chairs)	15 net

18. **Heating and cooking equipment** - Heating and cooking equipment shall be in accordance with sections 2007 CFC Chapter 24 Section 2404.15.1 through 2404.15.7.
- A. Installation - Heating or cooking equipment, tanks, piping hoses, fittings, valves, tubing, and other related components shall be installed as specified in the California Mechanical Code. (2007 CFC Chapter 24 Section 2404.15.1)
 - B. Venting - Gas, liquid and solid fuel burning equipment designed to be vented shall be vented to the outside air as specified in the *California Mechanical Code*. Where vents or

flues are used, all portions of the tent, canopy, or membrane structure shall be not less than 12 inches from the flue or vent. (2007 CFC Chapter 24 Section 2404.15.2)

- C. Location - Cooking and heating equipment shall not be located within 10 feet of exits or combustible material. (2007 CFC Chapter 24 Section 2404.15.3)
- D. Operations - Operations such as warming of foods, cooking demonstrations and similar operations that use solid flammables, butane or other similar devices which do not pose an ignition hazard, shall be approved. (2007 CFC Chapter 24 Section 2404.15.4)
- E. Cooking tents - Tents where cooking is performed shall be separated from others tents, canopies or membrane structures by a minimum of 20 feet. (2007 CFC chapter 24 Section 2404.15.5)
- F. Outdoor cooking - Outdoor cooking that produces sparks or grease laden vapors shall not be performed within 20 feet of a tent, canopy, or membrane structure. (2007 CFC Chapter 24 Section 2404.15.6)
- G. Electrical heating and cooking equipment - Electrical cooking and heating equipment shall comply with the *California Electrical Code*. (2007 CFC Chapter 24, Section 2404.15.7)

19. **Flammable and Combustible Liquids/Gases** – General LPgas equipment such as tanks, piping, hoses, fittings, valves, tubing, and other related components shall be approved and in accordance with Chapter 38 and the *California Mechanical Code*. (2007 CFC Chapter 24 Section 2404.16.1)

- A. Location of containers – LPgas containers shall be located outside. Safety release valves shall be pointed away from the tent, canopy, or membrane structure. (2007 CFC Chapter 24 Section 2404.16.2)
- B. Containers 500 gallons or less - Portable LPgas containers with a capacity 500 gallons or less shall have a minimum separation between the container and structure, property lines, public ways, or other containers of not less than 10 feet. (2007 CFC Chapter 24 Section 2404.16.2.1)
- C. Containers more than 500 gallons - Portable LPgas containers with a capacity of more than 500 gallons shall have a minimum separation between the container and structures, property lines, public ways, or other containers of not less than 25 feet. (2007 CFF Chapter 24 Section 2404.16.2.1)
- D. Protection and security - Portable LPgas containers, piping, valves, and fittings which are located outside an area being used to fuel equipment inside a tent, canopy, or membrane structure shall be adequately protected to prevent tampering, damage by vehicles, or other hazards and shall be located in an approved location. Portable LPgas containers shall be securely fastened in place to prevent unauthorized movement. (2007 CFC Chapter 24 Section 2404.16.3)
- E. Use of flammable or combustible liquids – Flammable liquid fueled equipment shall not be used in tents, canopies, or membrane structures. (2007 CFC Chapter 24 Section 2404.17)
- F. Flammable and combustible liquid storage - Flammable and combustible liquids shall be stored outside in an approved manner not less than 50 feet from tents, canopies, or membrane structures. (2007 CFC Chapter 24 Section 2404.17.3)
- G. Refueling - Refueling shall be performed in an approved location not less than 20 feet from tents, canopies, or membrane structures. (2007 CFC Chapter 24 Section 2404.17.3)
- H. Display of motor vehicles – The display of motor vehicles shall be in accordance with the following: (2007 CFC Chapter 24 Section 2404.18)

- (i) Batteries shall be disconnected in an appropriate manner. (2007 CFC Chapter 24 Section 2404.18.1)
 - (ii) Vehicles or equipment shall not be fueled or defueled within the tent, canopy, or membrane structure. (2007 CFC Chapter 24 Section 2404.18.2)
 - (iii) Fuel in the fuel tank shall not exceed one-quarter of the tank capacity or 5 gallons, whichever is less. (2007 CFC Chapter 2404.18.2.1)
 - (iv) Fuel systems shall be inspected for leaks. (2007 CFC Chapter 24 Section 2404.18.2.2)
 - (v) Fuel tank openings shall be locked and sealed to prevent the escape of vapors. (2007 CFC Chapter 24, Section 2404.18.2.3)
 - (vi) The location of vehicles or equipment shall not obstruct means of egress. (2007 CFC Chapter 24, Section 2404.18.3)
- I. CNG or LPgas vehicles in places of assembly - When a compressed natural gas (CNG) or liquefied petroleum gas (LPgas) powered vehicle is parked inside a place of assembly, all the following conditions shall be met: (2007 CFC Chapter 24, Section 2404.18.3)
- (i) The quarter-turn shutoff valve or other shutoff valve on the outlet of the CNG or LPgas container shall be closed and the engine shall be operated until it stops. Valves shall remain closed while the vehicle is indoors.
 - (ii) The hot lead of the battery shall be disconnected.
 - (iii) Dual fuel vehicles equipped to operate on gasoline and CNG or LPgas shall comply with this section and sections CFC Chapter 24 Sections 2404.18.1 through 2404.18.5.3 for gasoline powered vehicles.
- J. Vehicle competitions and demonstrations - Liquid and gas fueled vehicles and equipment used for competition or demonstration within a tent, canopy, or membrane structure shall comply with sections CFC Chapter 24 Section 2404.18.5.1 through 2404.18.5.3.
- (i) Fuel for vehicles or equipment shall be stored in approved containers in an approved location outside of the structure no less than 50 feet from tents or canopies. (2007 CFC Chapter 24 Section, 2404.18.5.1)
 - (ii) Refueling shall be performed outside of the structure no less than 20 feet from tent or canopies. (2007 CFC Chapter 24, Section 2404.18.5.2)
 - (iii) Fuel spills shall be cleaned up immediately. (2007 CFC Chapter 24 Section 2404.18.5.3)
- K. Separation of generators - Generators and other internal combustion power sources shall be separated from tents, canopies, or membrane structures by a minimum of 20 feet and shall be isolated from contact with the public by fencing, enclosure, or other approved means. (2007 CFC Chapter 24 Section 2404.19)
20. **Standby Personnel** - When, in the opinion of the fire code official, it is essential for public safety in a tent, canopy, or membrane structure used as a place of assembly or any other use where people congregate, because of the number of persons, or the nature of the performance, exhibition, display, contest or activity, the owner, agent, or lessee shall employ one or more qualified persons, as required and approved, to remain on duty during the times such places are open to the public, or when such activity is being conducted. (2007 CFC Chapter 24 Section 2404.20)
- A. Before each performance or the start of such activity, standby personnel shall keep diligent watch for fires during the time such place is open to the public or such activity is

being conducted and take prompt measures for extinguishment of fires that occur and assist in the evacuation of the public from the structure.

- B. There shall be trained crowd managers or crowd manager supervisors at a ratio of one crowd manager/supervisor for every 250 occupants, as approved.

21. **Vegetation Removal** - Combustible vegetation shall be removed from the area occupied by a tent, canopy, or membrane structure, and from areas within 30 feet of such structure. (2007 CFC Chapter 24 Section 2404.21)
22. **Waste Material** - The floor surface inside tents, canopies, or membrane structures, and the ground outside and within a 30 foot perimeter, shall be kept clear of combustible waste. Such waste shall be stored in approved containers until removed from the premises. (2007 CFC Chapter 24 Section 2403.9)
23. **Combustible Materials** - Hay, straw, shavings, or similar combustible materials shall not be located within the tent, canopy, or membrane structure containing an assembly occupancy, except the materials necessary for the daily feeding and care of animals. Sawdust and shavings utilized for the public performance or exhibit shall not be prohibited, provided the sawdust and shavings are kept damp. Combustible materials shall not be permitted under stands of seats at anytime. (2007 CFC Chapter 24 Section 2404.5)
24. **Smoking** - Smoking shall not be permitted in tents, canopies, or membrane structures. Approved "NO SMOKING" signs shall be conspicuously posted throughout the structure. (2007 CFC Chapter 24, Section 2404.6)
25. **Portable Fire Extinguishers** - Provide one minimum 2A:10BC fire extinguisher every 75 feet of travel distance. The top portion of the portable fire extinguishers shall be mounted between 3 and 5 feet above the floor. (2007 CFC Chapter 24, Section 2404.7)
26. **Open Flames** - Open flame or other devices emitting flame, fire, or heat or any flammable or combustible liquids, gas, charcoal or other cooking device or any other unapproved devices shall not be permitted inside or located within 20 feet of the tent, canopy, or membrane structure while open to the public unless approved by the fire code official. (2007 CFC Chapter 24 Section 2404.7)
27. **Fireworks** - Fireworks shall not be used within 100 feet of tents, canopies, or membrane structures. (2007 CFC Chapter 24, Section 2404.8)
28. **Spot Lighting** - Spot or effect lighting shall only be by electricity, and all combustible construction located within 6 feet of such equipment shall be protected with approved noncombustible insulation not less than 9.25 inches thick. (2007 CFC Chapter 24 Section 2404.9)
29. **Safety Film** - Motion pictures shall not be displayed in tents, canopies, or membrane structures unless the motion picture film is safety film. (2007 CFC Chapter 24 Section 2404.10)
30. **Clearance** - There shall be a minimum clearance of at least 3 feet between the fabric envelope and all contents located inside the tent or membrane structure. (2007 CFC Chapter 24 Section 2404.11)
31. **Temporary Air-supported and Air-inflated Membrane Structures** - Temporary air-supported and air-inflated membrane structures shall comply with the following: (2007 CFC Chapter 24Section 2403.10)
 - A. During high winds, the use of doors in air supported structures shall be controlled to avoid excessive air loss. Doors shall not be left open. (2007 CFC Chapter 24 Section 2403.10)

- B. Air-supported and air-inflated structures shall have the design and construction of the fabric envelope and the method of anchoring in accordance with Architectural Fabric Structures Institute ASI 77. (2007 CFC Chapter 24 Section 2403.10.2)
- C. An air-supported structure used as a place of assembly shall be furnished with not less than 2 blowers, each of which has adequate capacity to maintain full inflation pressure with normal leakage. The design of the blower shall be so as to provide integral limiting pressure at the design pressure specified by the manufacturer. (2007 CFC Chapter 24 Section 2403.10.3)

SCHEDULING INSPECTIONS

- A. Inspection appointments can only be made by the installing contractor.
- B. It is the responsibility of the installing contractor or a representative to be on the job site during the inspection with a set of approved plans. Failure to do so will result in the cancellation of the inspection and an assessment of a re-inspection fee of \$150.00 will be assessed.
- C. Call (408) 615-4970 at least one business day prior to the desired date of the inspection. Inspections are assigned on a first come first served basis. The inspection request line is open Monday through Friday between 8:00 a.m. and 5:00 p.m.

SMART PERMIT INFORMATION SYSTEM

The City of Santa Clara offers you the opportunity to check the status of your fire permits on-line. To access the Smart Permit Information System please log onto the system at:

http://santaclaraca.gov/community/smt_permit_information.html

You can search the system using your Case Number (Permit number: FIR2008-00001), Project Name, Applicant Name or the address of the project.